

WHAT IS CLAIMED IS:

1. A cell search method for a mobile station in a mobile communication system, the method comprising a first step  
5 of despreading a received signal using a common spreading code common to all slots and detecting slot boundaries on the basis of a first average correlation coefficient, a second step of despreading the signal on the basis of said slot boundaries detected at the first step, using different  
10 individual spreading codes for said respective slots, and detecting frame boundaries and a scramble code group on the basis of a second average correlation coefficient, and a third step of descrambling a common pilot signal on the basis of said frame boundaries and scramble code group  
15 detected at the second step, and detecting a scramble code on the basis of a third average correlation coefficient, the method being characterized in that:

the detection results for said frame boundaries and scramble code are judged on the basis of a ratio of the  
20 largest one of a plurality of said third average correlation coefficients to a predetermined reference value.

2. The cell search method for a mobile station in a  
25 mobile communication system according to Claim 1, characterized in that said reference value is set on the basis of interference power calculated from said received

signal by said mobile station.

3. The cell search method for a mobile station in a mobile communication system according to Claim 1,  
5 characterized in that said reference value is set on the basis of said plurality of third average correlation coefficients except the largest one thereof.

10 4. The cell search method for a mobile station in a mobile communication system according to Claim 3, characterized in that said reference value is an average or a median of said plurality of third average correlation coefficients except the largest one thereof.

15 5. The cell search method for a mobile station in a mobile communication system according to Claim 1, characterized in that said reference value is set on the basis of a plurality of said second average correlation coefficients except the largest one thereof.

20 6. The cell search method for a mobile station in a mobile communication system according to Claim 5, characterized in that said reference value is an average or a median of said plurality of second average correlation  
25 coefficients except the largest one thereof.

7. The cell search method for a mobile station in a

mobile communication system according to Claim 1,  
characterized in that said reference value can be set on  
the basis of a plurality of said first average correlation  
coefficients.

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8. The cell search method for a mobile station in a  
mobile communication system according to Claim 7,  
characterized in that said reference value is an average  
or a median of an arbitrary number of said first average  
10 correlation coefficients selected from said plurality of  
first average correlation coefficients in the ascending  
order of the value.

9. A cell search method for a mobile station in a mobile  
15 communication system, the method descrambling a common  
pilot signal on the basis of information on known scramble  
codes and frame boundaries, and detecting a scramble code  
on the basis of an average correlation coefficient, the  
method being characterized in that:

20 detection results for said frame boundaries and  
scramble codes are judged on the basis of a ratio of the  
largest one of a plurality of said average correlation  
coefficients to a predetermined reference value.

25 10. The cell search method for a mobile station in a  
mobile communication system according to Claim 9,  
characterized in that said reference value is set on the

basis of interference power calculated from said received signal by said mobile station.

11. The cell search method for a mobile station in a  
5 mobile communication system according to Claim 10,  
characterized in that said reference value is set on the  
basis of a plurality of said average correlation  
coefficients except the largest one thereof.

10 12. The cell search method for a mobile station in a  
mobile communication system according to Claim 11,  
characterized in that said reference value is an average  
or a median of a plurality of said average correlation  
coefficients except the largest one thereof.

15 13. A cell search apparatus for a mobile station in a  
mobile communication system, the apparatus comprising a  
first detector for despreading a received signal using a  
common spreading code common to all slots and detecting  
20 slot boundaries on the basis of a first average correlation  
coefficient, a second detector for despreading the signal  
on the basis of said slot boundaries detected at the first  
step, using different individual spreading codes for said  
respective slots, and detecting frame boundaries and a  
25 scramble code group on the basis of a second average  
correlation coefficient, and a third detector for  
descrambling a common pilot signal on the basis of said

frame boundaries and scramble code group detected at the second step, and detecting a scramble code on the basis of a third average correlation coefficient, the apparatus being characterized by comprising:

5 judgement means for judging the detection results for said frame boundaries and scramble code on the basis of a ratio of the largest one of a plurality of said third average correlation coefficients to a predetermined reference value.

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14. The cell search apparatus for a mobile station in a mobile communication system according to Claim 13, characterized in that said reference value is set on the basis of interference power calculated from said received  
15 signal by said mobile station.

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15. The cell search apparatus for a mobile station in a mobile communication system according to Claim 13, characterized in that said reference value is set on the  
20 basis of said plurality of third average correlation coefficients except the largest one thereof.

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16. The cell search apparatus for a mobile station in a mobile communication system according to Claim 15,  
25 characterized in that said reference value is an average or a median of said plurality of third average correlation coefficients except the largest one thereof.

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17. The cell search apparatus for a mobile station in a mobile communication system according to Claim 13, characterized in that said reference value is set on the basis of a plurality of said second average correlation coefficients except the largest one thereof.

18. The cell search apparatus for a mobile station in a mobile communication system according to Claim 17, characterized in that said reference value is an average or a median of said plurality of second average correlation coefficients except the largest one thereof.

19. The cell search apparatus for a mobile station in a mobile communication system according to Claim 13, characterized in that said reference value can be set on the basis of a plurality of said first average correlation coefficients.

20. The cell search apparatus for a mobile station in a mobile communication system according to Claim 19, characterized in that said reference value is an average or a median of an arbitrary number of said first average correlation coefficients selected from said plurality of first average correlation coefficients in the ascending order of the value.

21. A cell search apparatus for a mobile station in a mobile communication system, the apparatus descrambling a common pilot signal on the basis of information on known scramble codes and frame boundaries, and detecting a  
5 scramble code on the basis of an average correlation coefficient, the method being characterized by comprising:

judgement means for judging detection results for said frame boundaries and scramble codes on the basis of  
10 a ratio of the largest one of a plurality of said average correlation coefficients to a predetermined reference value.

22. The cell search apparatus for a mobile station in a  
15 mobile communication system according to Claim 21, characterized in that said reference value is set on the basis of interference power calculated from said received signal by said mobile station.

20 23. The cell search apparatus for a mobile station in a mobile communication system according to Claim 22, characterized in that said reference value is set on the basis of a plurality of said average correlation coefficients except the largest one thereof.

25 24. The cell search apparatus for a mobile station in a mobile communication system according to Claim 23,

characterized in that said reference value is an average or a median of a plurality of said average correlation coefficients except the largest one thereof.